USER'S REFERENCE

ADAPTEC FIBRE CARD 9210LP
2 GIGABIT FIBRE CHANNEL HOST BUS ADAPTER

Adaptec Fibre Card 9210LP

User's Reference

adaptec®

Contents

In this book:

Overview

The Adaptec Fibre Card 9210LP is a reliable, high-performance serial I/O storage interface for servers. The serial nature of Fibre Channel brings the flexibility and ease of Local Area Network (LAN) connectivity to storage attachment, introducing the idea of Storage Area Networks (SAN). Fibre Channel simplifies the physical configuration issues related to the I/O channel. Peripherals may be positioned at considerable distances from the server (depending on cabling media) for convenience or for data security. More reliable in data transfer than conventional LAN, Fibre Channel offers 2 gigabit performance and greater device connectivity than parallel SCSI. The Adaptec Fibre Card 9210LP provides the I/O channel scalability required for continuous growth in storage capacity and availability needs.

The Adaptec Fibre Card 9210LP is a PCI-to-Fibre Channel controller card that provides a 2 gigabit serial interface between a server and a Fibre Channel storage system. The cabling between the storage system and the interface card can be either fiber optic or copper.

Features

The Adaptec Fibre Card 9210LP features an optical (AFC-9210LP) or copper (AFC-9210LPC) external connector interface. The optical interface requires the installation of a Small Form Factor Pluggable (SFP) module before connecting the Fibre Channel cables. The SFP is connected to an SFP receptacle on the adapter. See *SFP Overview* on page 8.

The copper connector interface uses the High Speed Serial Data Connector (HSSDC). For a list of cable assemblies, see *Fibre Channel Cable Assemblies* on page 18.

The Adaptec Fibre Card 9210LP supports Point-to-Point, Arbitrated Loop, and Fabric topologies, Class 2 and Class 3 services, and hardware assists for the SCSI FCP protocol.

The Adaptec Fibre Card 9210LP installs into a standard PCI (Peripheral Component Interconnect) slot. This adapter supports a high-performance 64-bit and 66 MHz PCI bus (backward compatible with 32-bit and 33 MHz). The PCI bus provides a high-speed (up to 528 MBps) path between the system board and the Fibre Channel Adapter. The Adaptec Fibre Card 9210LP is a PCI Bus Master device and requires a PCI Bus Mastering slot that conforms to the PCI Local Bus Specifications, version 2.2 or previous versions.

The Adaptec Fibre Card 9210LP provides flexibility to place Fibre Channel in full size or lower profile servers by coming with both low profile and standard height brackets.
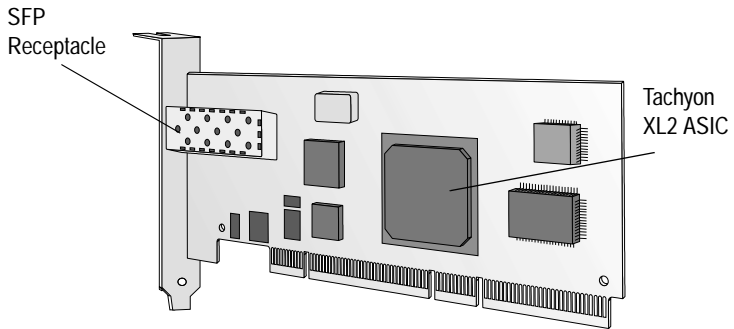
Figure 1. Adaptec Fibre Card 9210LP With Optical SFP Connector
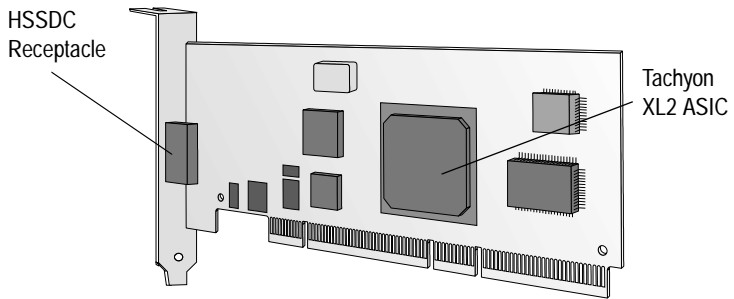
Figure 2. Adaptec Fibre Card 9210LPC With Copper HSSDC Connector

Contents of Kit

The contents in the kits are:

Optical Single

- 2 gigabit Adaptec Fibre Card (AFC-9210LP) with low profile bracket
- Standard height bracket
- Floppy disks containing the adapter drivers
- Printed Installation Guide
- CD with Installation Guide and User's Reference

Optical Kit

- 2 gigabit Adaptec Fibre Card (AFC-9210LP) with low profile bracket
- Optical SFP LC
- Standard height bracket
- Floppy disks containing the adapter drivers
- 10 m optical cable LC-LC
- Printed Installation Guide
- CD with Installation Guide and User's Reference

Copper Kit

- 2 gigabit Adaptec Fibre Card (AFC-9210LPC) with low profile bracket
- Standard height bracket
- Floppy disks containing the adapter drivers
- 3 m copper cable HSSDC-to-HSSDC
- Printed Installation Guide
- CD with Installation Guide and User's Reference

System Requirements

The minimum system requirements for the Adaptec Fibre Card 9210LP are:

For All Systems

- A Pentium or higher system that is PCI 2.2 or previous version compliant

For Windows NT Systems

- Windows NT® 4.0 installed with at least service pack 4
- Minimum recommended system memory is 32 MB

For Windows 2000 Systems

- Windows 2000® installed
- Minimum recommended system memory is 64 MB, 128 MB preferred

For Novell NetWare

- Novell NetWare 5.1 installed
- Minimum recommended system memory is 64 MB, 128 MB preferred

For SCO UnixWare

- UnixWare 7.1.x installed
- Minimum recommended system memory is 64 MB

For Sun Solaris

- Solaris 8.0 (x86) installed
- Minimum recommended system memory is 64 MB

Cable Requirements

For a list of cable assemblies, see *Fibre Channel Cable Assemblies* on page 18.

Installing the Hardware

Before installing the Adaptec Fibre Card 9210LP into your server or workstation, make sure that the system is powered down. If your system supports hot plug PCI, see *PCI Hot Plug Support* on page 11. For information on installing the device drivers for your Operating System, see the *Adaptec Fibre Card 9210LP Installation Guide*.

Installing the Adapter in the PCI Slot

Install the Adaptec Fibre Card 9210LP in any Bus Mastering PCI slot. The following generalized installation steps pertain to most PCI installations. Most system chassis are either vertical or horizontal orientated; therefore, you should install your card depending on the orientation of your system. See Figure 3 on page 7. Consult your server or workstation manual for PCI card installation.

1   Turn OFF power to your system.

2   Discharge any static electricity build-up before handling the Adaptec Fibre Card 9210LP by touching a grounded metal object (such as the exposed metal parts on the back of your computer).

3   Remove the cover from your computer.

4   Locate an empty 64-bit PCI expansion slot in your system. If the computer does not have a 64-bit slot, you can install the card in a 32-bit PCI slot.

5   Remove the expansion slot cover. (Save the slot cover screw.)

6   Insert the Adaptec Fibre Card 9210LP into the slot until it is firmly and evenly seated in the PCI connector.

WARNING: Be careful when inserting the Adaptec Fibre Card 9210LP into a PCI slot. Some older 32-bit slots do not accomodate 64-bit cards, and the card or slot may break if you use force.

Vertical Installation   Horizontal Installation
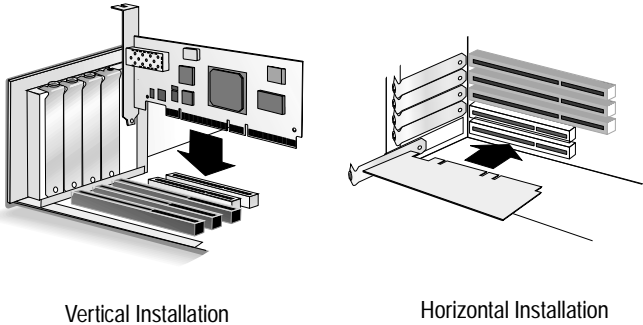
Figure 3. Installing the Adapter

7 Replace the slot cover screw.

Changing the Bracket on Your Adapter

Your Adaptec Fibre Card 9210LP comes with a low profile bracket. If you need to attach a standard height bracket, follow these steps:

1 Unscrew the two screws located on the face of your Fibre Channel adapter near your bracket. Set the screws aside.

2 Remove the bracket.

3 Attach the new bracket by lining up the bracket mounting tabs with the matching holes in your Fibre Channel adapter. Fasten

the two screws you set aside in Step 1 by twisting securely into the holes.
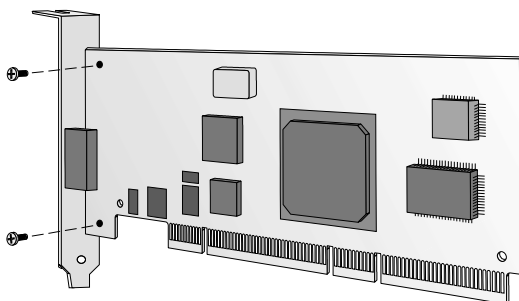
Figure 4. Changing the Bracket

SFP Overview

An SFP converts internal electrical signals to external optical signals for transmission across the Fibre Channel media. The Fibre Channel cable inserts into the connector of the SFP module.

There are several types of SFP modules currently available that can be used in the Adaptec Fibre Card 9210LP. SFPs are *hot pluggable*, which means they can be plugged into, or pulled out of the adapter while the power is applied. SFPs are available from qualified third-party vendors.

WARNING: If you switch SFPs while the system is powered up, make sure the adapter is secured in the PCI slot. If the adapter is not secured in the PCI slot, damage may occur to the adapter and possibly the system's logic board.

The Adaptec Fibre Card 9210LP comes with a multimode short wave optical SFP that enables data transfer over short to medium distances. For data transfer over longer distances, a single-mode long wave optical SFP is available.

Removing the SFP From the Adaptec Fibre Card 9210LP

To remove the SFP, follow these steps:

1 Remove the Fibre Channel cable.

2 Pull the module out of the receptacle.

3 Reinsert the dust plug.
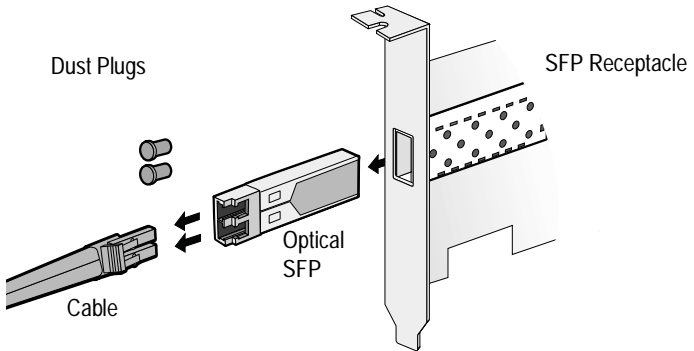
Figure 5. Removing the Optical SFP Module

Verifying the Adapter

You can verify the adapter and cable installation by powering up the system and looking at the two LEDs on the bulkhead of the adapter. See Figure 6 on page 10. Under normal operation, the LEDs operate as follows:

Upon Power-up

■ PWR/ACT LED is on

■ LNK LED is off

During Card Initialization by the Host OS

■ PWR/ACT LED will flash as Fibre Channel devices are identified

■ LNK LED is off

Once the Card has been Initialized by the Host OS

■ PWR/ACT LED will flash at approximately one second intervals

■ LNK LED is on if the adapter is operating properly

Figure 6. Adaptec Fibre Card 9210LP and Adaptec Fibre Card 9210LPC
With Low Profile and Standard Height Brackets

PCI Hot Plug Support

PCI Hot Plug involves the insertion and removal of PCI adapters from a system without interrupting the normal operation or powering down the whole system. PCI Hot Plug functions by disabling power to PCI slots where PCI Hot Plug capable adapters will be inserted or removed. To prov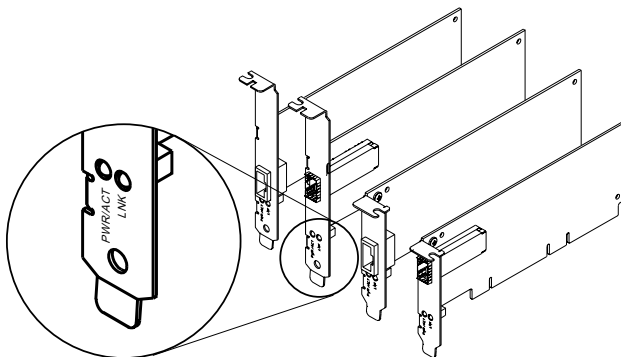ide PCI Hot Plug functionality, the installed operating system, the motherboard, and the device driver for the PCI adapter must all support the PCI Hot Plug capability.

The Adaptec Fibre Card 9210LP device drivers support the PCI hot swap/replacement capability on system platforms that support PCI Hot Plug. Check your system documentation to determine if PCI Hot Plug is supported.

Caution: *Do not* insert or remove the Adaptec Fibre Card 9210LP from PCI slots when power is enabled to the PCI slot. If PCI Hot Plug support is provided by your system hardware and software, then follow the procedures for insertion and removal of Hot Plug capable PCI adapters as defined by your system documentation.

Note: See the Readme file for individual drivers on PCI Hot Plug capabilities.

Troubleshooting

The following tips are general troubleshooting procedures:

■ Check that the card is seated evenly all the way into the PCI slot.

■ Check motherboard system documentation to ensure that Bus Mastering support is provided and enabled for the PCI slot containing the Adaptec Fibre Card 9210LP.

■ Check that the SFP is seated correctly into the adapter.

■ Check that the cable is inserted all the way into the SFP.

■ Check that the cable is inserted all the way into the HSSDC.

■ Check that all peripherals are connected correctly throughout the loop. Peripherals with intermittent connections can cause long OS initialization during power on. Remove suspect peripheral from loop.

■ Check the LED lights. The PWR/ACT LED turns on at power up, and flashes after the card is initialized. The LNK LED indicates that the link is up. For more information on verifying the adapter card, see *Verifying the Adapter* on page 10.

■ If using cascading hubs, use the same hub vendor.

■ Verify that at least one device in the loop is powered up if you are not using a hub or switch. Hubs or switches detect devices that are not powered up and automatically do a port bypass.

■ Check that a switch is not attached to the channel port with the intended Boot device. If a switch is present and attached, the BIOS will not boot.

■ Check the troubleshooting section of your operating system user manual.

- If a problem occurs while loading the Windows NT or Windows 2000 driver or when you try to access a storage device, check the Event Log. The Event Log lists events that have been logged by various software components. As an example, if the driver failed to initialize, the log should have an event listed as Driver failed to initialize.

  To get to the Event Log on Windows NT, click the **Start** button, select **Programs—Administrative Tools**, then click **Event Viewer**.

  To get to the Event Log on Windows 2000, click the **Start** button, select **Programs—Administrative Tools**, then click **Event Viewer**. Select the **System Log** at the left side of the Event Window.

- For event viewing in Sun Solaris, there is a utility called dmesg and a facility called syslogd that can be used to view messages and logging information. You should refer to the man pages of your system to determine how to configure and use these commands.

Note: A possible cause of driver or device failure could be that the loop is not complete, or in other words, devices are not connected in series to form a loop. This does not apply if you are using a hub or switch.

Using FCSelect and Disk Utilities

The Adaptec Fibre Card 9210LP has the onboard FCSelect configuration utility which allows you to change Adaptec Fibre Card 9210LP options without opening the computer chassis or handling the card. FCSelect also includes disk utilities to list the devices connected to the Adaptec Fibre Card 9210LP.

The following table lists the available and default settings for each FCSelect configuration option.

FCSelect Configuration Options	Available Settings	Default Setting
FC Card INT 13h support	Enabled/Disabled	Disabled
FC Card Hard AL_PA	All valid AL_PA IDs	0x01
Device Scanning	Backward/Forward	Backward
Host Adapter Speed	Auto Negotiation 2 Gigabit 1 Gigabit	1 Gigabit

Starting FCSelect

1 Turn ON or restart your system.

   During the startup process, pay careful attention to the messages that appear on your screen.

2 When the following message appears on your screen, press the **Ctrl**-**A** keys simultaneously (this message appears for only a few seconds):

   Press <Ctrl><A> for FCSelect (TM) Utility!

3 From the menu that appears, use the arrow keys to move the cursor to the option you want to select, (Configure/View FC Card Settings, or run FC Disk Utilities), then press **Enter**.

Note: You can return to the previous menu at any time by pressing **Esc**.

Exiting FCSelect

1   Choose Save Changes and Reboot to save configuration changes you've made and reboot your system

2   Choose Discard Changes and Reboot to return to previous configuration setting and reboot your system.

3   Press **ESC** or choose Return to the Main Menu to continue using FCSelect.

Using FCSelect Settings

To select an option, use the arrow keys to move the cursor to the option. By pressing the Space Bar key, you can toggle the option.

In some cases, selecting an option displays another menu. You can return to the previous menu at any time by pressing **Esc**.

To restore the original FCSelect default values, press **F6** from the main FCSelect screen.

FCSelect Device Configuration

The following are changeable FC card settings:

- **FC card INT 13h support**—(Default: *Disabled*) Enables or disables the FC card BIOS.

  - Change this option to **Enabled** to allow the FC BIOS to scan and initialize the FC devices on the loop. When the FC BIOS is enabled, it will provide INT 13 support for the first **8** devices detected.

  - Leave this option set to **Disabled** if the FC devices on the FC loop are intialized by OS drivers. Use this setting when the Adaptec Fibre Card 9210LP is set up in a multi-initiator configuration.

The following three options have no effect when the FC Card BIOS is disabled. (The FC Card BIOS is normally Disabled by default.)

■ **FC card Hard AL_PA**—(Default: *0x01*) Each port in an FC Arbitrated Loop is assigned an Arbitrated Loop Physical Address (AL_PA). FC card will claim selected AL_PA during initialization. Lower AL_PA will have a higher priority.

■ **Devices scanning**—(Default: *Backward*) Choose FC device scanning order.

■ **Backward**—When selected, FC Card will scan the devices starting from the last valid AL_PA (0xEF) until the first valid AL_PA (0x01).

■ **Forward**—When selected, FC Card will scan the devices starting from the first valid AL_PA (0x01) until the last valid AL_PA (0xEF).

■ **Host Adapter Speed**—(Default: *1 Gigabit*) Determines the maximum data transfer rate that the FC Card supports. The Adaptec Fibre Card 9210LP can perform at *1 Gigabit* or 2 Gigabit speeds, or Auto Negotiation, with the default setting at *1 Gigabit*. To operate at full potential in a 2 Gigabit SAN, change the Host Adapter speed to 2 Gigabit.

FCSelect Settings

The following settings display information about FC Card:

■ **Tachyon Chip**—Indentifies Tachyon chip present on FC Card.

■ **World Wide Name**—Displays World Wide Name for FC Card, a unique identifier within Fibre Channel domain.

■ **Interrupt (IRQ) Channel**—Displays the IRQ channel used by FC Card.

■ **BIOS Segment Address**—Displays BIOS Segment Address of FC BIOS.

Using FCSelect Disk Utilities

To access the FCSelect disk utilities, follow these steps:

1   Select the Disk Utilities option from the menu that appears after starting FCSelect. FCSelect scans the bus (to determine the devices installed) and displays a list of all IDs and the devices assigned to each ID.

2   Use the arrow keys to move the cursor to a specific ID and device, then press **Enter.**

3   Press **Enter** *if* a confirmation menu appears.

Fibre Channel Cable Assemblies

Cable assemblies are available from Adaptec, Inc. You can order from the online store at http://www.adaptecstore.com, or within the US, you can call: 1-800-442-7274. See the following tables for the type of cable assemblies that are offered.

HSSDC-to-HSSDC Cable Assembly (2 gigabit Operations)

Description	Length (Meters)
28 AWG	1.0
28 AWG	3.0
28 AWG	5.0
28 AWG	7.0
28 AWG	9.0

HSSDC-to-DB9 Cable Assembly (2 Gigabit Operations)

Description	Length (Meters)
28 AWG	1.0
28 AWG	3.0
28 AWG	5.0
28 AWG	7.0
28 AWG	9.0

Multimode Optical Cable LC-LC Duplex 50/125 (2 gigabit Operations)

Description	Length (Meters)
LC-LC Duplex 50/125	5.0
LC-LC Duplex 50/125	10.0
LC-LC Duplex 50/125	25.0
LC-LC Duplex 50/125	100.0

Multimode Optical Cable LC-SC Duplex 50/125 (2 gigabit Operations)

Description	Length (Meters)
LC-SC Duplex 50/125	5.0
LC-SC Duplex 50/125	10.0
LC-SC Duplex 50/125	25.0
LC-SC Duplex 50/125	100.0

Adaptec Customer Support

If you have questions about installing or using your Adaptec product, check this document first—you will find answers to most of your questions here. If you need further assistance, use the support options listed below.

Technical Support Identification (TSID) Number

■ Before contacting Technical Support, you'll need your TSID. The TSID helps us provide more efficient service by accurately identifying your product and support status. The 12-digit TSID can be found on the white barcode-type label included inside the box with your product.

■ Affix your TSID label here:

Support Options

■ Search the Adaptec Support Knowledgebase (ASK) at http://ask.adaptec.com for articles, troubleshooting tips, and frequently asked questions for your product.

■ For support via Email, submit your question to Adaptec's Technical Support Specialists at http://ask.adaptec.com.

North America

■ Visit our Web site at http://www.adaptec.com.

■ For information about Adaptec's support options, call +1 408-945-2550, 24 hours per day, 7 days per week.

■ To speak with a Technical Support Specialist,

For **Hardware products** call +1 408-934-7274,
Monday–Friday, 3:00 A.M. to 5:00 P.M., Pacific Time.

For **RAID and Fibre Channel** call +1 321-207-2000
Monday–Friday, 3:00 A.M. to 5:00 P.M., Pacific Time.

To expedite your service, have your computer in front of you.

■ To order Adaptec products, including software and cables, call +1 800-442-7274 or +1 408-957-7274.

Europe

- Visit our Web site at http://www.adaptec-europe.com.

- **English and French:** To speak with a Technical Support Specialist, call one of the following numbers, Monday–Thursday, 10:00 to 12:30 and 13:30 to 17:30; Friday, 10:00 to 12:30 and 13:30 to 16:30, Central European Time:
    - **English**: +32 2 352 3470
    - **French**: +32 2 352 3460

    To expedite your service, have your computer in front of you.

- **German:** To speak with a Technical Support Specialist, call +49 89 456 40660, Monday–Thursday, 9:30 to 12:30 and 13:30 to 16:30; Friday, 9:30 to 12:30 and 13:30 to 15:00, Central European Time. To expedite your service, have your computer in front of you.

- To order Adaptec products, including accessories and cables:
    - **UK**: +0800 96 65 26 or fax +0800 731 02 95
    - **Other European countries**: +32 11 300 379

Australia and New Zealand

- Visit our Web site at http://www.adaptec.com.au.

- To speak with a Technical Support Specialist, call +612 9416 0698, Monday–Friday, 10:00 A.M. to 4:30 P.M., Eastern Australia Time. To expedite your service, have your computer in front of you.

Hong Kong and China

- Visit our Web site at http://www.adaptec.com.

- To speak with a Technical Support Specialist, call +852 2869 7200, Monday–Friday, 10:00 A.M. to 5:00 P.M.

- Fax Technical Support at +852 2869 7100.

Singapore

- Visit our Web site at http://www.adaptec.com.

- To speak with a Technical Support Specialist, call +65 245 7470, Monday–Friday, 10:00 A.M. to 5:00 P.M.
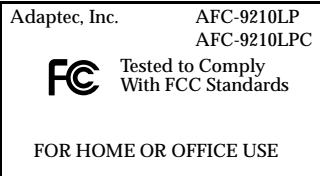
Regulatory Compliance Statements

Federal Communications Commission Radio Frequency Interference Statement

WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. However, if this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between equipment and receiver.

• Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/television technician for help.

• Use a shielded and properly grounded I/O cable and power cable to ensure compliance of this unit to the specified limits of the rules.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

Adaptec, Inc.   AFC-9210LP
                       AFC-9210LPC

FC Tested to Comply
       With FCC Standards

FOR HOME OR OFFICE USE

CE European Union Compliance Statement

This Information Technology Equipment has been tested and found to comply with the following European directives:

EMC Directive 89/336/EEC, as amended by 92/31/EEC and 93/68/EEC

EN 50081-1 (1992)
EN55022 (1994) Class B
EN 50082-1 (1992)
EN61000-4-2 (1998)
EN61000-4-3 (1998)
EN61000-4-4 (1995)
EN61000-4-5 (1995) Surges
EN61000-4-6 (1996) Conducted immunity
EN61000-4-11 (1994) Supply dips of variation

Australian/New Zealand Compliance Statement

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548 set out by the Spectrum Management Agency.

Canadian Compliance Statement

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Japanese Compliance (Voluntary Control Council Initiative)

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8. The entire liability of Adaptec and its licensors, and your exclusive remedy for a breach of this warranty, shall be:

   a. The replacement of any media not meeting the above limited warranty which is returned to Adaptec; or

   b. if Adaptec or its distributor is unable to deliver replacement media which is free from defects in materials or workmanship, you may terminate this Agreement by returning the Software and your money will be refunded.

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12. General. You acknowledge that you have read this Agreement, understand it, and that by using the Software you agree to be bound by its terms and conditions. You further agree that it is the complete and exclusive statement of the agreement between Adaptec and you, and supersedes any proposal or prior agreement, oral or written, and any other communication between Adaptec and you relating to the subject matter of this Agreement. No additional or any different terms will be enforceable against Adaptec unless Adaptec gives its express consent, including an express waiver of the terms of this Agreement, in writing signed by an officer of Adaptec. You assume full responsibility for the use of the Software and agree to use the Software legally and responsibly. This Agreement shall be governed by California law, except as to copyright matters, which are covered by Federal law. This Agreement is deemed entered into at Milpitas, California by both parties. Should any provision of this Agreement be declared unenforceable in any jurisdiction, then such provision shall be deemed severable from this Agreement and shall not affect the remainder hereof. All rights in the Software not specifically granted in this Agreement are reserved by Adaptec.

Should you have any questions concerning this Agreement, you may contact Adaptec by writing to:

Adaptec, Inc.
Legal Department
691 South Milpitas Boulevard
Milpitas, California 95035.

Limited 3-Year Warranty

1. Adaptec, Inc. ("Adaptec") warrants to the purchaser of this product that it will be free from defects in material and workmanship for a period of three (3) years from the date of purchase (excluding the SFP, which is warranted for a period of one (1) year). If the product should become defective within the warranty period, Adaptec, at its option, will repair or replace the product, or refund the purchaser's purchase price for the product, provided it is delivered at the purchaser's expense to an authorized Adaptec service facility or to Adaptec.

2. Repair or replacement parts or products will be furnished on an exchange basis and will either be new or reconditioned. All replaced parts or products shall become the property of Adaptec. This warranty shall not apply if the product has been damaged by accident, misuse, abuse or as a result of unauthorized service or parts.

3. Warranty service is available to the purchaser by delivering the product during the warranty period to an authorized Adaptec service facility or to Adaptec and providing proof of purchase price and date. The purchaser shall bear all shipping, packing and insurance costs and all other costs, excluding labor and parts, necessary to effectuate repair, replacement or refund under this warranty.

4. For more information on how to obtain warranty service, write or telephone Adaptec at 691 South Milpitas Boulevard, Milpitas, CA 95035, (800) 959-7274.

5. THIS LIMITED WARRANTY DOES NOT EXTEND TO ANY PRODUCT WHICH HAS BEEN DAMAGED AS A RESULT OF ACCIDENT, MISUSE, ABUSE, OR AS A RESULT OF UNAUTHORIZED SERVICE OR PARTS.

6. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES WHICH NOW OR HEREAFTER MIGHT OTHERWISE ARISE RESPECT TO THIS PRODUCT. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT SHALL (A) HAVE NO GREATER DURATION THAN 5 YEARS FROM THE DATE OF PURCHASE, (B) TERMINATE AUTOMATICALLY AT THE EXPIRATION OF SUCH PERIOD AND (C) TO THE EXTENT PERMITTED BY LAW BE EXCLUDED. IN THE EVENT THIS PRODUCT BECOMES DEFECTIVE DURING THE WARRANTY PERIOD, THE PURCHASER'S EXCLUSIVE REMEDY SHALL BE REPAIR, REPLACEMENT OR REFUND AS PROVIDED ABOVE. INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION LOSS OF DATA, ARISING FROM BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ARE NOT THE RESPONSIBILITY OF ADAPTEC AND, TO THE EXTENT PERMITTED BY LAW, ARE HEREBY EXCLUDED BOTH FOR PROPERTY DAMAGE, AND TO THE EXTENT NOT UNCONSCIONABLE, FOR PERSONAL INJURY DAMAGE.

7. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, AND SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION OR EXCLUSIONS MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Adaptec

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